IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Spears, *et al.*

Serial No.: 09/780,984

Filed: February 9, 2001

For: **Controller for Photosensor Array with Multiple Different Sensor Areas**

Group Art Unit: 2625

Examiner: Thierry Pham

Docket No. 10011155-1

APPEAL BRIEF UNDER 37 C.F.R. §41.37

Mail Stop Appeal Brief - Patents
Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This is an appeal from the decision of Examiner Thierry Pham, Group Art Unit 2625, mailed August 9, 2006, rejecting claims 1 – 19 in the present application and making the rejection FINAL.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF THE CLAIMS

Claims 1 – 19 remain pending, claims 20 – 40 having been canceled previously.

IV. STATUS OF AMENDMENTS

A final Office Action was mailed on August 9, 2006. Applicants responded to that final Office Action on September 26, 2006, at which time arguments for allowability were presented without amendment. That response was entered as per the Advisory Action of October 18, 2006. Notably, the Advisory Action indicated that the previous rejections under 35 U.S.C. 112, first paragraph were removed, but that Applicants' arguments regarding rejections under 35 U.S.C. 103 were deemed unpersuasive. A copy of the current claims is attached hereto as Exhibit A.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

In this regard, claim 1 is the sole independent claim in the application. Claim 1 relates to an embodiment that involves a multiple resolution sensing apparatus (such as an optical image scanner, for example; *see* page 1, lines 14 – 16) comprising: a plurality of first photosensor elements coupled together to form a first linear array and having a first length and a first resolution (such as sensor row 200 of FIG. 5, for example; *see* page 9, lines 19 – 33); a plurality of second photosensor elements coupled together to form a second linear array and having a second length and a second resolution (such as sensor row 206 of FIG. 5, for example; *see* page 9, lines 19 – 33); a coupler (such as coupler 538 of FIG. 5, for example; *see* page 10, lines 13 – 25) having a first amplifier (*see* page 8, lines 13 – 16, wherein an embodiment is described that uses a single amplifier to amplify signals from a sensor row 200 and from another row 206) and an output, said coupler coupled to said first linear array and to said second linear array; and a controller (such as controller 572 of FIG. 5, for example; *see* page 11, lines 7 - 11) coupled to said coupler and providing a control signal to said coupler such that said output is

coupled to said first linear array when said first resolution is employed and such that said output is coupled to said second linear array, instead of said first linear array, when said second resolution is employed; the first amplifier being operative to amplify signals provided by the first linear array when the first resolution is being employed and to amplify signals provided by the second linear array when the second resolution is being employed (*see* page 12, lines 18 – 29, for example).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 – 19 stand finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Suggs* in view of *Hatanaka*. Applicants respectfully traverse.

VII. ARGUMENT

A. Rejections under 35 U.S.C. § 103 are Improper for Failing to Teach or Reasonably Suggest All of the Limitations of Applicants' Claims

The final Office Action generally indicates that *Suggs* teaches all of the elements of Applicants' independent claims, except for the additional features of the first amplifier. However, the Office Action indicates that *Hatanaka* teaches such an amplifier and that the combination of *Suggs* and *Hatanaka*, therefore, renders the claims obvious. In this regard, Applicants respectfully agree with the contention in the Office Action indicating that *Suggs* does not teach or suggest a coupler having a first amplifier that is operative to amplify signals from a first linear array and a second linear array. However, *Hatanaka* does not teach or reasonably suggest these features in a manner that is adequate for the purpose of rendering the pending

claims unpatentable. Specifically, *Hatanaka* discloses the following:

> FIG. 3 shows a block diagram of a preferred embodiment of the present invention. A reference numeral 301 denotes a shift register for sequentially selecting the common electrodes B.sub.1, B.sub.2, . . . , B.sub.m and applying voltages; 302 indicates a photosensor element array; 303 is signal amplifying means for amplifying the photocurrent signals to be output to the independent electrodes S.sub.1, S.sub.2, . . . , S.sub.n ; 304 is first sample and hold means for memorizing and holding the output of the signal amplifying means 303; 305 is a second sample and hold means for memorizing and holding the outputs of the signal amplifying means 303; 306 a first switching array for sequentially switching the outputs of the first sample and hold means 305; 307 a second switching array for sequentially switching the outputs of the second sample and hold means 306; and ***308 differential signal amplifying means for obtaining the difference between the values of the signals to be output from the first and second switching arrays 306 and 307 and amplifying this difference as a signal***.

(*Hatanaka* at column 3, lines 17 – 36). (Emphasis added).

Notably, the above teaching indicates that the element alleged in the Office Action to correspond to Applicants' "first amplifier" is a differential amplifier that receives first and second input signals.

Additionally, *Hatanaka* teaches:

> In this way, the synthesized signals of the photo current signals SS.sub.1 -SS.sub.n and noise component signals due to the crosstalk currents are memorized in the first sample and hold means 304, while only the noise component signals due to the crosstalk currents are memorized in the second sample and hold means 305. Thereafter, ***the switching elements constituting the first and second switching arrays 306 and 307 are respectively switched in the manner such that the switching elements of the same order are switched at the same timing in accordance with the timings of timing pulse signals (SSW.sub.1, SSW.sub.2, . . . , SSW.sub.n)***. In this way, the switching elements in each switching array are sequentially switched.

(*Hatanaka* at column 4, lines 23 – 35). (Emphasis added).

Based on the foregoing, it is also clear that an input from each of the first and second arrays is provided to the differential amplifier 308. That is, one of the switches associated with the first array and one of the switches associated with the

second array are operated simultaneously in order to provide signals to the differential amplifier. Then, sequentially, another one of the switches associated with the first array and a corresponding one of the switches associated with the second array are operated simultaneously in order to provide signals to the differential amplifier. These teachings are in direct contrast to the limitations recited in Applicants' claims.

In this regard, claim 1 recites:

> 1. A multiple resolution sensing apparatus comprising;
> a plurality of first photosensor elements coupled together to form a first linear array and having a first length and a first resolution;
> a plurality of second photosensor elements coupled together to form a second linear array and having a second length and a second resolution;
> a coupler having ***a first amplifier*** and an output, said coupler coupled to said first linear array and to said second linear array; and
> a controller coupled to said coupler and providing a control signal to said coupler ***such that said output is coupled to said first linear array when said first resolution is employed and such that said output is coupled to said second linear array, instead of said first linear array, when said second resolution is employed***;
> ***the first amplifier being operative to amplify signals provided by the first linear array when the first resolution is being employed and to amplify signals provided by the second linear array when the second resolution is being employed***.

(Emphasis added).

Notably, Applicants have recited a multiple resolution sensing apparatus in which several inter-related components are present. Thus, particular attention must be given to antecedent basis in order to properly interpret the recited features. In particular, Applicants' recite a "controller," the output of which "is coupled to said first linear array when said first resolution is employed and such that said output is coupled to said second linear array, instead of said first linear array, when said second resolution is employed." Of particular importance is the aspect relating to

the output being "coupled to said second linear array, instead of said first linear array, when said second resolution is employed." At least this aspect is not taught or reasonably suggested by *Suggs* (as appears to be indicated in the Office Action) or by *Hatanaka*.

As set forth above, *Hatanaka* receives sequential inputs from the first and second arrays, in that different inputs are sequentially provided from each of those arrays. *Hatanaka* does not receive an input from one of those arrays without receiving an input from another as appears to be indicated in the Office Action. To the contrary, each of the arrays of *Hatanaka* has multiple switches, and corresponding switches from each of the arrays are activated to provide the differential amplifier with signals. Thus, neither *Suggs* nor *Hatanaka* teach or reasonably suggest a controller as recited in claim 1. Therefore, Applicants respectfully assert that claim 1 is in condition for allowance.

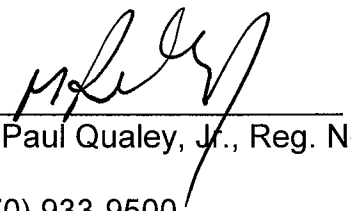
Since claims 2 - 19 are dependent claims that incorporate all the features/limitations of claim 1, and are not otherwise rejected in the Action, Applicants respectfully assert that these claims also are in condition for allowance. Additionally, these claims recite other features/limitations that can serve as an independent basis for patentability.

CONCLUSION

Based upon the foregoing discussion, Applicant respectfully requests that the Examiner's final rejection of the pending claims be overruled and withdrawn by the Board, and that the application be allowed to issue with all pending claims.

Please charge Hewlett-Packard Company's deposit account 08-2025 in the amount of $500.00 for the filing of this Appeal Brief. No additional fees are believed to be due in connection with this Appeal Brief. If, however, any additional fees are deemed to be payable, you are hereby authorized to charge any such fees to deposit account No. 08-2025.

Respectfully submitted,



M. Paul Qualey, Jr., Reg. No. 43,024

(770) 933-9500

VIII. CLAIMS - APPENDIX

1. (Previously Presented) A multiple resolution sensing apparatus comprising;

a plurality of first photosensor elements coupled together to form a first linear array and having a first length and a first resolution;

a plurality of second photosensor elements coupled together to form a second linear array and having a second length and a second resolution;

a coupler having a first amplifier and an output, said coupler coupled to said first linear array and to said second linear array; and

a controller coupled to said coupler and providing a control signal to said coupler such that said output is coupled to said first linear array when said first resolution is employed and such that said output is coupled to said second linear array, instead of said first linear array, when said second resolution is employed;

the first amplifier being operative to amplify signals provided by the first linear array when the first resolution is being employed and to amplify signals provided by the second linear array when the second resolution is being employed.

2. (Previously Presented) The apparatus of claim 1, wherein said first linear array and said second linear array are located on a single substrate.

3. (Previously Presented) The apparatus of claim 1, wherein said first linear array, said second linear array and said coupler are located on a single substrate.

4. (Previously Presented) The apparatus of claim 1, wherein said coupler further includes a second amplifier, and wherein said first linear array, said second linear array and said coupler are located on a single substrate.

5. (Previously Presented) The apparatus of claim 1, wherein said first length and said second length are substantially the same and at least equal to one dimension of an image to be sensed.

6. (Previously Presented) The apparatus of claim 4, wherein said coupler further comprises a switch controlled by said controller such that said switch couples said output to said first linear array when said first resolution is employed and such that said switch couples said output to said second linear array when said second resolution is employed.

7. (Previously Presented) The apparatus of claim 6, wherein said first amplifier is coupled between said switch and said first linear array such that charges detected by said plurality of first photosensor elements are amplified into a first electrical signal; and

said second amplifier is coupled between said switch and said second linear array such that charges detected by said plurality of second photosensor elements are amplified into a second electrical signal.

8. (Previously Presented) The apparatus of claim 1, wherein said first linear array and said second linear array detect only a first color of light.

9. (Original) The apparatus of claim 1, further comprising:

a plurality of third photosensor elements coupled together to form a third linear array and having a third length and said first resolution;

a plurality of fourth photosensor elements coupled together to form a fourth linear array and having a fourth length and said second resolution;

a second coupler having an second output, said second coupler coupled to said third linear array and to said fourth linear array;

a plurality of fifth photosensor elements coupled together to form a fifth linear array and having a fifth length and said first resolution;

a plurality of sixth photosensor elements coupled together to form a sixth linear array and having a sixth length and said second resolution;

a third coupler having a third output, said coupler coupled to said first linear array and to said second linear array,

wherein said controller is coupled to said second coupler and said third coupler, and wherein said controller provides said control signal to said second coupler so that said second output is coupled to said third linear array when said first resolution is employed and so that said second output is coupled to said fourth linear array when said second resolution is employed, and wherein said controller provides said control signal to said third coupler so that said third output is coupled to said fifth linear array when said first resolution is employed and so that said third output is coupled to said sixth linear array when said second resolution is employed.

10. (Original) The apparatus of claim 9, wherein said first linear array and said second linear array detect a first color of light, wherein said third linear array and said fourth linear array detect a second color of light, and wherein said fifth linear array and said sixth linear array detect a third color of light.

11. (Previously Presented) The apparatus of claim 9, wherein said first linear array, said second linear array, said third linear array, said fourth linear array, said fifth linear array and said sixth linear array are located on a single substrate.

12. (Original) The apparatus as in claim 11, wherein said first length, said second length, said third length, said fourth length, said fifth length and said sixth length are substantially the same and at least equal to one dimension of an image to be sensed.

13. (Original) The apparatus as in claim 1, further comprising a plurality of third photosensor elements coupled together to form a third linear array and having a third length and a third resolution, said third linear array coupled to said coupler and wherein said controller providing a control signal to said coupler such that said output is coupled to said third linear array when said third resolution is employed.

14. (Previously Presented) The apparatus of claim 12, wherein said first linear array, said second linear array, said third linear array and said coupler are located on a single substrate.

15. (Original) The apparatus of claim 12, wherein said first length, said second length and said third length are substantially the same and at least equal to one dimension of an image to be sensed.

16. (Original) The apparatus of claim 15, wherein said coupler further comprises a third amplifier coupled to said third linear array such that charges detected by said plurality of third photosensor elements are amplified into a third electrical signal

17. (Original) The apparatus of claim 16, wherein said first linear array, said second linear array and said third linear array detect a first color of light.

18. (Previously Presented) The apparatus of claim 13, wherein said first resolution corresponds to said first linear array having substantially 300 of said first photosensitive elements, wherein said second resolution corresponds to said second linear array having substantially 600 of said second photosensitive elements, and wherein said third resolution corresponds to said third linear array having substantially 2400 of said third photosensitive elements.

19. (Previously Presented) The apparatus of claim 18, wherein said third linear array is comprised of two rows, each row having substantially 1200 of said third photosensitive elements.

20. – 40. (Canceled)

IX. EVIDENCE - APPENDIX

None.

IX. RELATED PROCEEDINGS- APPENDIX

None.